

6111/USSN 10/633,493
Group Art Unit 1732

REMARKS

Applicants have considered the outstanding official action. It is respectfully submitted that the claims are directed to patentable subject matter.

Initially, applicants note that non-elected claims 1-8 and 18-25 have been canceled. Applicants reserve the right to file divisional applications directed to the non-elected subject matter.

The disclosure is objected to on the basis that the status of the parent application on page 1 needs to be updated. Page 1, first paragraph of the specification has been amended accordingly.

The title is stated to be non-descriptive. The title has been amended in accordance with the Examiner's suggestion.

The sole rejection is of claims 9-17 under 35 U.S.C. §103(a) over U.S. Patent No. 6,903,034 B1 (Putnam I) in combination with U.S. Patent No. 6,321,425 B1 (Putnam II).

Independent claims 9 and 10 are directed to a process for forming a nonwoven material which includes producing thermoplastic polymer filaments; laying the filaments on a moving support to provide at least one layer

with a machine direction tensile strength of less than about 5 N per 5 cm at a basis weight of 50 gsm; passing the at least one layer through a compacting calendar having a surface temperature and nip pressure such that the temperature and nip pressure do not cause the filaments to exceed a melting point of the filaments (claim 9) or the compacting calendar has a surface temperature of less than about 130°C at a calendar nip pressure of about 30 N/mm (claim 10); winding the at least one layer at a tension of less than about 40 N/m; and unwinding the at least one layer and subjecting the at least one layer to hydroentanglement to provide a nonwoven material; wherein the at least one layer is provided and subjected to winding in absence of prebonding of the filaments.

Neither Putnam I nor Putnam II disclose winding and unwinding of at least one layer of polymer filaments prior to being subjected to hydroentanglement in the absence of the at least one layer being prebonded, whether such is thermal, mechanical or chemical prebonding. Further, winding of at least one layer in the absence of prebonding occurring at a tension of less than about 40 N/m is not taught in Putnam I or Putnam II. Neither Putnam I nor Putnam II recognize any criticality in tension during winding. Each of Putnam I and Putnam II teach thermal

and/or mechanical bonding of a precursor web prior to hydroentanglement of the precursor web to provide a finished fabric.

Applicants have amended claims 9 and 10 (the only pending independent claims) to clarify that the winding occurs in the absence of prebonding. Support is present in the specification, for example, at page 1, lines 14-18; page 3, lines 12-22. The process of the invention is unique in that the rheological properties of the individual filaments are not affected in any way during the process (see, e.g., page 6, lines 4-12) while providing a nonwoven material with improved softness and drape due to lack of prebonding and use of hydroentanglement (see, e.g., page 6, lines 21-24).

As to Putnam I, the Examiner acknowledges at page 4 of the outstanding official action "that Putnam I does not explicitly teach that at least one layer is provided in the absence of prebonding", noting that Putnam I does teach light thermal bonding, and relies on Putnam II for teaching providing at least one layer in absence of prebonding. Based on this combination the Examiner states that it would be obvious to use the above teaching of Putnam II in Putnam I to facilitate handling of the material during formation of the nonwoven. Applicants respectfully submit that Putnam II teaches only the provision of a precursor web which is

"lightly bonded" prior to being subjected to subsequent entangling treatment and winding. Putnam II does not teach providing at least one layer in the absence of prebonding and winding such followed by unwinding and being subjected to hydroentanglement. Putnam II states that the "spunbonded precursor web, in particular the strength of its bonds has a direct influence on the strength characteristics" (column 2, lines 65-67), that "it is contemplated that the spunbond precursor web is subjected to bonding which provides no more than a minimum tensile strength which permits winding and unwinding of the precursor web" (column 3, lines 17-20), and "a lightly bonded precursor web ... may be produced on a commercial spunbond production line ... except thermal point bonding calendaring temperatures are reduced ... to prepare a similar precursor web for subsequent entangling and imaging, the calendar temperature is reduced to 160 degrees C" (column 4, lines 41-52). Example 1 also requires a "lightly bonded spunbond polyester precursor web" (column 4, lines 60-62). Claims 1 and 3 of Putnam II also require that the precursor web be bonded.

Accordingly, the applied art does not teach the provision and winding of at least one layer of polymer filaments in absence of prebonding. The applied art does not disclose winding at least one layer in absence of

6111/USSN 10/633,493
Group Art Unit 1732


prebonding wherein the winding takes place under a specified tension. No suggestion is provided to modify either Putnam I or Putnam II to obtain applicants' claimed invention since each requires prebonding of a precursor web in order for the web to serve its desired purpose and neither provides any recognition of winding the precursor web prior to being subjected to hydroentanglement. Accordingly, the applied art does not render the claimed invention obvious within the meaning of 35 U.S.C. §103. Withdrawal of the §103 rejection is therefore requested.

Reconsideration and allowance of the claims are respectfully urged.

Respectfully submitted,

ACHAI BONNEH ET AL

By



Mary J. Breiner, Attorney
Registration No. 33,161
BREINER & BREINER, L.L.C.
P.O. Box 19290
Alexandria, Virginia 22320-0290

Telephone: (703) 684-6885